

## **1.4 Lab Standards and RFCs**

Robert Potter

Full sail University

NETWORKING TECHNOLOGIES

Instructor: Tahlly Jimenez

Due Tue, Sep 30, 2025 @ 11:59 PM EDT

1. Seek out an individual standard or protocol involved in networking (ex HTTP or TCP/IP) and answer the following questions:

- a. What standard/protocol did you choose?

**TCP/IP**

- b. What does the standard/protocol do?

**TCP/IP Provides a set of universal protocols that all for computers systems and networks to connect and exchange information.**

- c. Who established this standard/protocol and do they still maintain the standard/protocol?

**TCP/IP was originally established by Vint Cerf and Bob Kahn in the 1970's. It is now maintained by the IETF.**

- d. Does this organization function alone, or did they collaborate with other organizations to create and maintain the standard?

**The IETF is an organization that is open and free for anyone around the world to contribute to.**

2. Research the 802 Standards Committee established by the IEEE (Institute of Electrical and Electronics Engineers).

- a. What is the purpose of the 802 group and what does it focus on?

**They create and upholds networking standards and best practices for local, metropolitan, and other area networks through an open, consensus-based process, while promoting their adoption worldwide.**

- b. Identify at least 7 of the active working or study groups that fall under the 802 Group (ex. **802.1 Higher Layer LAN Protocols Working Group**) and their area of coverage.

**802.1 Higher Layer Lan Protocols Working Group**

**The IEEE 802.1 Working Group is chartered to concern itself with and develop standards and recommended practices in the following areas: 802**

**LAN/MAN architecture, internetworking among 802 LANs, MANs and other wide area networks, 802 Security, 802 overall network management, and protocol layers above the MAC & LLC layers.**

### **802.3 Ethernet Working Group**

**The IEEE 802.3 Ethernet Working Group (WG) is responsible for developing the Standard for Ethernet under the auspices of the IEEE 802 LAN/MAN Standards Committee (LMSC).**

### **802.11 Wireless Lan Working Group**

**IEEE 802.11 is a standards working group on wireless local area networks. The working group is a part of IEEE LMSC (LAN MAN Standards Committee) formerly called IEEE Project 802. IEEE LMSC reports to the Standards Activity Board (SAB) of the IEEE Computer Society.**

### **802.15 Wireless Specialty Networks Working Group**

**The 802.15 Working Group (WG) on Wireless Specialty Networks (WSN) focuses on the development of open consensus standards addressing wireless networking for the emerging Internet of Things (IoT), allowing these devices to communicate and interoperate with one another, mobile devices, wearables; Optical Wireless Communications (OWC), Autonomous Vehicles, etc.**

### **802.18 Radio regulatory TAG**

**The IEEE 802.18 Radio Regulatory Technical Advisory Group (“RR-TAG”) supports the work of the IEEE 802 LMSC and the IEEE 802 wireless Working Groups – IEEE 802.11 (WLAN), IEEE 802.15 (WSN), IEEE 802.16 (WMAN), IEEE 802.20 (Wireless Mobility), IEEE 802.21 (Handoff/Interoperability Between Networks), and IEEE 802.22 (WRAN) – by actively monitoring and participating in radio regulatory matters worldwide as an advocate for IEEE 802.**

### **802.19 Wireless Coexistence Working Group**

**IEEE 802.19 develops standards for coexistence between wireless standards of unlicensed devices. IEEE 802.19 reviews coexistence assurance (CA) documents produced by working groups developing new wireless standards for unlicensed devices.**

## IEEE 802.24 Vertical Applications TAG

**They focus on application categories that use IEEE 802 technology and are of interest to multiple IEEE 802 WGs and have been assigned to IEEE 802.24 by the IEEE Executive Committee.**

3. Research the IETF (Internet Engineering Task Force) and their activities.
  - a. What other activities does the IETF take part in other than TCP/IP (such as protocols, standards, and events)? You may give this in a bullet format, but provide more than a list of areas they participate in. Be sure to give examples for support.
    - **Applications and Real-Time Area:**  
This area develops application protocols and architectures focusing on three main categories: Real time communications (Phone, Video, and messaging) Delay tolerant applications (Email and codecs) and shared building blocks (Uri schemes, MIME types, and authentication) that support both types.
    - **General Area:**  
This area activities focuses on supporting, updating and maintaining the IETF standards development process.
    - **Internet Area:**  
This area's activities include IP layer (both IPv4 and IPv6), implications of IPv4 address depletion, co-existence between the IP versions, DNS, DHCP, host and router configuration, mobility, multihoming, identifier-locator separation, VPNs and pseudo wires along with related MPLS issues, and various link layer technologies. The Internet Area is also responsible for specifying how IP will run over new link layer protocols.
    - **Operations and Management Area:**  
The OPS Area focuses on network management (protocols like SNMP, RADIUS, NETCONF, YANG) and operations (operator feedback and issue resolution) to address Internet management, AAA, DNS, IPv6, security, and routing concerns.
    - **Routing Area:**  
The Routing Area ensures Internet routing scalability and stability by maintaining and developing routing/forwarding protocols (e.g., BGP, OSPF, IS-IS, MPLS), supporting architectures (centralized/distributed), YANG models, optical control planes, and addressing security, manageability, and cross-SDO coordination.
    - **Security Area:**

The Security Area develops security protocols that provide integrity, authentication, non-repudiation, confidentiality, access control, and key management, while collaborating across all IETF areas to apply these protections.

- **Web and Internet Transport Area**

The WIT Area manages Internet transport protocols (QUIC, TCP, UDP, SCTP, DCCP) with congestion control and queue management, as well as Web protocols like HTTP and related technologies.

4. Research the RFC process through the IETF.
  - a. What is an RFC (Request for Comments)?

**RFCs describe the Internet's technical foundations, such as addressing, routing, and transport technologies. RFCs also specify protocols like TLS 1.3, QUIC, and WebRTC that are used to deliver services used by billions of people every day, such as real-time collaboration, email, and the domain name system.**

- b. Identify the steps of creation that an RFC must go through from inception to ratification.

**RFCs start as Internet-Drafts, which typically are created by individuals or small groups. They then get adopted by working groups, which include volunteers from hardware companies, software developers, and network operators. Once the reviews are complete, they head for final editorial review, it is then assigned a unique number and published by the RFC editor.**

5. Use the ISO Member link below to answer the following questions:
  - a. Who are the contributing members of the ISO for the United States, Russia and China?

**United States: ANSI (American National Standards Institute)**

**Russia: GOST R (Federal Agency on Technical Regulating and Metrology)**

**China: SAC (Standardization Administration of China)**

- b. Are there any other countries which may impact your work in the future? Identify 2 countries (not including the United States, Russia, and China) and who is their

contributing member, if you don't have an idea of where you will work, research any 2 additional countries.

**As a Cybersecurity Professional I know that North Korea have a lot of APTs associated with it and their Body is : CSK (Committee for Standardization of the Democratic People's Republic of Korea).**

**The Second is Iran for the Same Reasons as above their body is: INSO (Iran National Standards Organization)**

## References:

### Question 1:

[https://en.wikipedia.org/wiki/Internet\\_protocol\\_suite](https://en.wikipedia.org/wiki/Internet_protocol_suite)

[https://en.wikipedia.org/wiki/Internet\\_Engineering\\_Task\\_Force](https://en.wikipedia.org/wiki/Internet_Engineering_Task_Force)

### Question 2:

<https://standards.ieee.org/featured/ieee-802/#:~:text=Since%201980%2C%20the%20IEEE%20802%20LAN/MAN%20Standards,wireless%20networks%2C%20ensuring%20compatibility%20of%20all%20devices.>

### Question 3:

<https://www.ietf.org/technologies/areas/>

### Question 4:

<https://www.ietf.org/process/rfc/>

<https://www.techtarget.com/whatis/definition/Request-for-Comments-RFC#:~:text=RFCs%20begin%20as%20Internet%20Drafts,homepage%20of%20the%20RFC%20Editor.>

### Question 5:

<https://www.iso.org/about/members>

<https://www.cisa.gov/topics/cyber-threats-and-advisories/nation-state-cyber-actors#:~:text=The%20Chinese%20government%E2%80%94officially%20known,network/system%20disruption%20or%20destruction.>